DOE F 1325.8
(8-89)

United States Government **Department of Energy**

memorandum

DATE: SEP 13 1991

REPLY TO ATTN OF: EM-421 (W. A. Williams, 3-8149)

SUBJECT: Commercial Disposal of Department of Energy Radioactive (By-product and Low-Level) and Mixed Wastes

TO: Leo P. Duffy, Director
Office of Environmental Restoration
and Waste Management

This memorandum is to request your approval of the option to dispose Department of Energy radioactive (by-product and low-level) or mixed wastes at commercial waste disposal sites. The mixed wastes contain both radioactive substances and hazardous wastes as defined by the Resource Conservation and Recovery Act (RCRA).

Background

DOE has long required the disposal of its radioactive wastes at DOE facilities. However, many DOE remedial action projects are expected to generate very large quantities of wastes. A recent survey by the DOE Field Office, Oak Ridge (OR) (Attachment A), indicates that the total volume of waste, for Fernald, the Formerly Utilized Sites Remedial Action Program (FUSRAP), and the Weldon Spring Site Remedial Action Project (WSSRAP), is in excess of 5 million cubic yards. While the proportion of mixed waste in this estimate is small, it is troublesome because of land disposal restrictions, limits on storage time for RCRA wastes, and lengthy and costly acquisition of RCRA Part B permits for long-term storage. The extremely large volume of the radioactive wastes and debris is also troublesome, because the volume would fill many existing DOE disposal facilities.

Site Availability

DOE and contractor staffs have been approached thus far by two commercial firms who have expressed an interest in accepting DOE remedial action wastes for disposal.

The Envirocare of Utah, Inc. facility is licensed by the State of Utah for debris and bulk wastes containing artificial and natural radionuclides. In addition, the Envirocare facility is permitted by the State of Utah to accept certain hazardous wastes for land disposal. The combination of the nuclear license and the RCRA Part B permit allows the facility to accept some mixed waste for burial. The Envirocare facility may be able to accept "Thirds mixed waste" under a national capacity variance. Many of DOE's remedial action mixed wastes fall into this category. It cannot accept solvent-containing, dioxin-containing, or California list wastes because the national capacity variance does not apply to these waste types. The facility can accept many of the waste types that DOE has identified for commercial disposal. In addition, Envirocare has applied

002906
11/19/91

to the U.S. Nuclear Regulatory Commission (NRC) for a license to permit the disposal of by-product material as defined under Section 11.e.(2) of the Atomic Energy Act, as amended. Much of the FUSRAP and WSSRAP wastes are of this type.

The Dawn Mining Company has also expressed an interest in receiving waste for disposal at its uranium milling site near Spokane, Washington. Dawn could accept as much as 1.5 million cubic yards of contaminated soil and other wastes; Dawn currently has an 11.e.(2) by-product material license and is also licensed for burial of some other radioactive wastes. At the Dawn facility, the wastes would be used as fill in the closure of the mill tailings impoundment.

In summary, both Dawn and Envirocare appear to have the capability to accept much of DOE's remedial action waste. We also have indications that other commercial ventures may emerge.

Issues

There is a lack of waste disposal capacity within DOE for large volumes of waste, and there is an absence of disposal capacity for mixed waste in virtually any volume. DOE's failure to dispose of mixed waste promptly upon generation will necessitate RCRA Part B storage permits and could result in a de facto policy of perpetual storage of the waste at current sites. As a result of the continued storage of mixed waste, DOE will incur: (1) a future liability to treat the waste; (2) continuing surveillance and maintenance costs; (3) future costs of closure of facilities and permits; and (4) the costs of permit applications, regulatory oversight, etc. There are commitments at a number of DOE sites not to import wastes for disposal, making disposal of such wastes at some existing sites difficult. Lastly, the price estimates for commercial disposal at the Envirocare facility are substantially lower than those at DOE's facilities. These factors all argue strongly for DOE's consideration of commercial disposal capacity for radioactive soils and debris. Commercial disposal is not a solution to all disposal problems with DOE's mixed or radioactive wastes but would facilitate disposal of much of DOE's remedial action wastes.

It might be argued that there is the potential for future liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a result of using private facilities for the disposal of DOE wastes. However, the potential CERCLA liability to DOE from its use of commercial facilities for radioactive and mixed waste disposal does not appear to be different from the potential CERCLA liability connected with DOE's current use of commercial facilities for chemical and PCB waste disposal.

It also might be argued that there is the potential for future liability since DOE is a potential long-term land owner of commercial, radioactive waste burial sites under Section 83 of the Atomic Energy Act, as amended, (for by-product material) and under Section 151 of the Nuclear Waste Policy Act, as amended (other low-level waste). However, DOE would not become the owner of the site until the site has met the post-closure monitoring requirements of the NRC. Each licensee must meet financial responsibility requirements as a license condition, and the financial responsibility requirements for commercial radioactive waste burial facilities provide assurance that funds are available for closure and monitoring of the site prior to the termination of the license. Thus, DOE's use of commercial waste burial sites does not seem to involve an increase in future financial liability to DOE, should DOE ultimately take title to the sites. The financial responsibility requirements reduce DOE's potential liability by providing a source of funds for correcting any operational deficiencies. There are similar financial responsibility requirements under RCRA; these would be applicable to commercial disposal sites for mixed wastes.

Another issue is the volume and timing of waste burial. If DOE commits to a burial contract for a large volume over several years, it will achieve cost savings over multiple actions involving smaller volumes. Informal prices from Envirocare show that the cost per cubic foot for disposal of mixed waste is $120 for small volumes but drops to less than $18 for several hundred thousand cubic yards. It may be possible to have Envirocare and Dawn compete with each other for waste disposal, and this competition could result in a lower price. The sites with the most waste are at Fernald, WSSRAP, and FUSRAP facilities. The on-going environmental review and analysis at these sites is expected to conclude within the next 5 years with the issuance of Records of Decision (RODs) regarding some 2.5 million cubic yards of waste material. Depending on the remedies selected in the RODs, all or part of this waste could be available for shipment and burial at a commercial disposal site.

It might be argued that the disposal sites for the Uranium Mill Tailings Remedial Action Program (UMTRAP) might be suitable for the disposal of similar by-product materials from DOE's other remedial sites. However, a close look reveals that these sites are not suitable for several reasons. First, a decision to add additional wastes to these sites would adversely impact uranium mill tailings cleanup schedules and the relationships with States and localities at which the sites are located. Second, while UMTRAP sites are now generally exempt from CERCLA's requirements, the addition of new "outside" wastes would make the sites subject to CERCLA.

Before DOE can proceed to dispose of radioactive wastes containing either by-product material or low-level wastes at commercial sites, EM will either need to revise DOE Order 5820.2A, or internally seek an exemption which will require the approval of EM-30 (successor to DP-12, which is the approving DOE office referenced in the Order) in consultation with EH-1.

Currently, Chapter IV, Section 3.a(2) requires by-product wastes to be disposed of at DOE sites. There is a similar requirement for low-level waste in Chapter III, Section 2.c. of the Order. However, Section 9 of the Order allows exemptions to be granted.

Meeting with Envirocare President

In mid-May, Jill Lytle and I met with the President of Envirocare. Envirocare has furnished me with useful follow-up material, which provides a history of their past waste disposal contracts (Attachment B). This information shows very clearly that significant cost savings could be obtained by contracting for disposal services with Envirocare on a large volume basis. We have not received similar cost data from Dawn Mining, although Dawn Mining verbally indicated that their firm would be competitive with Envirocare.

Near-Term Problem -- Colonie, New York, Site

FUSRAP is actively working on the cleanup of a site in Colonie, New York. At this site, there are currently over 200 containers of radioactive mixed waste, mostly contained in 55-gallon drums. The mixed waste is stored under RCRA interim status. The State of New York is authorized to regulate the mixed wastes at the Colonie site and is requiring DOE to either announce its intent to remove RCRA wastes or file a permit application for continued storage by September 30, 1991. Given FUSRAP's ultimate objectives at the Colonie site, the current intent is to cease storage activities. DOE's failure to remove all RCRA wastes from the site by November 1992 will result in non-compliance with Federal and State hazardous waste laws unless the site obtains a storage permit by that date. Action must be taken soon to address this waste management problem.

OR has prepared a detailed analysis of the available options, and a copy is attached for your review (Attachment C). The available options considered in this analysis include:

- Continued on-site storage;
- Shipment and storage at Hanford;
- Treatment to eliminate RCRA hazardous constituents; and
- Disposal at Envirocare without treatment

The Oak Ridge analysis demonstrates that shipment and disposal of this waste at Envirocare presents distinct advantages over the three other available options. These advantages include:

- Significantly lower cost;
- A permanent disposal of the waste (rather than storage);
- Likelihood of success;
- Timely implementation prior to expiration of interim status; and
- Utilization of the National Capacity Variance, which allows land disposal of specific forms of mixed waste without further treatment until May 1992. It is our understanding that the Envirocare site meets the required minimum technology standards for the National Capacity Variance.

Thus, the use of the Envirocare facility offers advantages which make it the preferred disposal option. Although shipment of the small volume of Colonie waste as a separate action would result in a higher cost as compared to a larger disposal contract, Envirocare has committed to crediting DOE with the differential between the cost of this disposal action and that under a large contract if such a contract is executed.

In particular, I urge that you approve recommendation number 3 below dealing with the Colonie Site.

Summary

The situation at Colonie is repeated at other locations throughout DOE, and the potential for using commercial disposal facilities offers disposal capacity that is not otherwise available. Thus, it appears prudent to utilize commercial disposal facilities for waste disposal in support of environmental restoration and other DOE activities.

Recommendations

Based on the above discussion, the following individual recommendations are made for your consideration and approval:

1. I recommend that you authorize DOE facilities to dispose of radioactive or mixed wastes at commercial facilities with appropriate licenses and permits, subject to the completion of the necessary procurement procedures and all required DOE environmental analyses for the activity generating the waste. If approved, the decision would be effective immediately and EM would initiate the process necessary to appropriately revise DOE Order 5820.2A. In the interim, EM will obtain an exemption to DOE Order 5820.2A to permit certain commercial disposals described in recommendations 3 and 4 below.

   APPROVED: _____

   DISAPPROVED: L Ors

   DATE: 11/13/91

2. I recommend that you authorize the negotiation of a commercial disposal contract or contracts for an option to dispose of not less than 2.5 million cubic yards of radioactive or mixed waste over a 5-year period. Bidders would be required, as a prerequisite, to have the necessary permits and licenses prior to accepting waste and may restrict their bids to the types of waste for which they will be permitted and licensed.

   APPROVED: Leo Duffy

   DISAPPROVED: _____

   DATE: 11/13/91

3. I recommend that you approve the initiation of the process necessary to begin the negotiation of a contract for disposal of the Colonie radioactive mixed waste at the Envirocare facility, or any other similarly qualified disposal facility, subject to confirmation of applicable permits at the time of shipment (including compliance with minimum technology standards), completion of the appropriate environmental analysis documents, and compliance with the applicable Competition and Contracting Act requirements for awarding a contract without full and open competition. EM-40 will obtain approval from EM-30 (successor to DP-12) for an exemption to DOE Order 5820.2A prior to execution.

APPROVED: _____

DISAPPROVED: _____

DATE: 11/13/91

4. I recommend that you authorize all field office managers to approve the commercial disposal of small quantities of radioactive mixed waste, subject to the completion of the necessary procurement procedures, when such disposal promotes timely compliance with RCRA, or other environmental laws, and when appropriate environmental analyses have been prepared. Small quantities would be limited to less than 1000 cubic yards of waste per year per program or installation. Field offices would be responsible for verifying that all necessary permits are in place at the time of contracting and at the time of shipment. These contracts should clearly indicate that they will either expire or terminate when a contract outlined in number 2 above is in place. Prior to an actual disposal of waste, the field office will obtain approval from EM-30 for an exemption to DOE Order 5820.2A.

APPROVED: _____

DISAPPROVED: _____

DATE: 11/13/91

If these recommendations are approved, we will prepare an appropriate transmittal to the field office managers. Because of timing constraints, an approval memorandum to OR for the Colonie situation is attached for your signature in conjunction with recommendation number 3.

R. P. Whitfield
Associate Director
Office of Environmental Restoration

4 Attachments

cc:
G. Sjoblom, EM-1
R. Berube, EH-20
J. Lytle, EM-30
W. Dennison, GC-11

ATTACHMENT 1

ENVIROCARE OF UTAH, INC.
COMPARISON OF NORM WASTE PRICES

The following is a list of prices reflecting NORM contracts that Envirocare has completed. The first two contracts listed are from private customers and the remainder are for government agencies. Because of the volume involved and the difference in liability implications the prices given to government agencies are lower than the prices we can offer private generators.

CUSTOMER	COST(per/cf)
Private - Utah	$34.20
- a contract was signed in 1989 for the disposal of approximately 70 cy of NORM waste from Utah	
Private - California	$23.76
- a contract was signed in 1990 for the disposal of approximately 7,020 cy of NORM waste from California	
State of New Jersey	$29.61
- a contract was signed in 1988 for the disposal of approximately 2,750 cy of NORM waste from Kearny, New Jersey where the waste had been stored in 10,000 drums for several years	
EPA Region III - Lansdowne	$24.92
- a contract was signed in 1988 for the disposal of approximately 4,725 cy of NORM waste from Lansdowne, Pennsylvania	
EPA Region VIII	$5.18
- a contract was signed in 1988 for the disposal of approximately 250,000 cy of NORM waste from the Denver Radium project in Colorado. All of the material from this contract was from one project	

COMPARISON OF NORM WASTE PRICES
ATTACHMENT 1

CUSTOMER	COST(per/cf)
EPA Region VIII - a contract was signed in 1989 for the disposal of approximately 15 cy of NORM waste from Golden, Colorado	$29.62
EPA Region II - Montclair Phase 1 - a contract was signed in 1990 for the disposal of approximately 6,400 cy of NORM waste from Montclair, New Jersey	$21.30
EPA Region II - Montclair Phase 2 - a contract was signed in 1991 for the disposal of approximately 6,650 cy of NORM waste from Montclair, New Jersey	$21.02
EPA Region II - Envirocare is currently working on a contract with the EPA for the disposal of a large volume of NORM waste from their region	< $ 7.00

ENVIROCARE OF UTAH

ATTACHMENT 1

ENVIROCARE OF UTAH, INC.
COMPARISON OF MIXED WASTE PRICES

Pricing information for Mixed Waste is somewhat limited inasmuch as Envirocare's permit for Mixed Waste is relatively new. The following is a list of prices that Envirocare has given to customers for Mixed Waste. The first three prices are from the Corp of Engineer's (EPA) bid that has been fully reviewed and accepted by the Kansas City Office of the Corp of Engineers. These contracts are now awaiting administrative approval. The other prices are from estimates prepared for the Department of Energy's FUSRAP office.

CUSTOMER	COST(per/cf)
Corp of Engineers - EPA Region II - Envirocare recently came to agreement with the Corp of Engineers for the disposal of less than 350 cy of Mixed Waste from a series of sites in the Northeast, including the Radium Chemical Site and the Essex County Site	$115.70
Corp of Engineers - EPA Region II - Envirocare recently came to agreement with the Corp of Engineers for the disposal of less than 3500 cy of Mixed Waste from a series of sites in the Northeast, including the Radium Chemical Site and the Essex County Site	$75.84
Corp of Engineers - EPA Region II - Envirocare recently came to agreement with the Corp of Engineers for the disposal of less than 8000 cy of Mixed Waste from a series of sites in the Northeast, including the Radium Chemical Site and the Essex County Site	$57.00
Department of Energy - Envirocare recently prepared an estimate for 55 cubic yards of Mixed Waste for DOE's FUSRAP office	$120.00

COMPARISON OF MIXED WASTE PRICES
ATTACHMENT 1

CUSTOMER	COST(per/cf)
Department of Energy - Envirocare recently prepared an estimate for 33,333 cubic yards of Mixed Waste for DOE's FUSRAP office	$40.00
Department of Energy - Envirocare recently prepared an estimate for 370,370 cubic yards of Mixed Waste for DOE's FUSRAP office	< $18.00

ENVIROCARE

ATTACHMENT 2

DOE SITE CONTACTS

OAK RIDGE

MAYWOOD
DOE Contact - Les Price

Envirocare met several DOE representatives at a public meeting held in Maywood on December 6, 1990. Envirocare also met with Mr. Price on January 31st and presented an overview of our capabilities. Site visits have been made on several occasions. Discussions continue.

K-25 MARTIN MARIETTA
DOE Contact - Larry Clark

Envirocare met with Mr. Clark on January 31st and presented an overview of our capabilities. A follow up visit was made to Oak Ridge on May 8th as well as a site tour. Discussions continue.

ST. LOUIS AIRPORT
DOE Contact - David Adler

Envirocare met with Mr. Adler on January 31st and presented an overview of our capabilities. A unofficial site visit has been made.

COLONIE
DOE Contact - Les Price

Envirocare met with Mr. Price on January 31st and presented an overview of our capabilities. A price estimate was prepared to be included in a DOE proposal. Discussions continue.

BAKER WILLIAMS WAREHOUSE
DOE Contact - Les Price

Envirocare met with Mr. Price on January 31st and presented an overview of our capabilities. Discussions continue.

PORTSMOUTH
DOE Contact - none to date
Martin Marietta Contacts - Tom Parry
Dick Blake

Martin Marietta contacted Envirocare and asked for a presentation which was made on May 7th. Discussions continue.

DOE SITE CONTACTS
ATTACHMENT 2

FERNALD

DOE Contact - Gerry Westerbeck

Envirocare met with members of the staff at Fernald on March 13th and presented an overview of our site and our capabilities. Upon their request a price estimate as well as additional information is being prepared. Another meeting was held with Mr. Westerbeck and several other staff members on May 9th. Several specific projects were discussed. Discussions continue.

LAWRENCE LIVERMORE

DOE Contact - Keith Gilbert
DOE Contact - Pat Barry

Phone contact is being made with the DOE on at least a weekly basis.

HANFORD

DOE Contact - Ken Bracken

Phone contact has been made with Mr. Bracken. Information on Envirocare has been sent to Mr. Bracken for his review.

ROCKY FLATS

DOE Contact - Gary Huffman

Envirocare met with Mr. Huffman and some of his staff on May 10th and presented an overview of our capabilities. A site tour was also conducted. Discussions continue.

WELDON SPRINGS

DOE Contact - Steve McCracken

Envirocare met with Mr. McCracken and several of his staff on March 12th and presented an overview of our site and capabilities. Upon their request a price estimate was provided as well as additional information on our site. Discussions continue.

ATTACHMENT 3

Unique Considerations Associated with
Envirocare's Site and Process

1. The Envirocare facility is unique because of the way it came into existence. The site was originally selected as the final disposal location of 2.5 million cubic yards of Uranium Mill Tailings from the Department of Energy's Vitro project. Because of the manner in which this cleanup was accomplished and the benefits it provided to Utah our Clive facility and operations have unusual local public support.

2. The Clive site is located over 25 miles from the nearest residents. There is no potable water below the site. The embankment is constructed in an area with over 300 feet of natural clay. The site receives less than 5 inches of precipitation annually. There are many other natural characteristics at the Clive site which provide additional acceptability.

3. Envirocare has an in-house analysis program to verify the contents of each waste shipment. Samples are taken from arriving shipments at regular intervals and analyzed in our on site laboratory to verify the wastes composition. In addition, each shipping container of waste is opened and examined before the waste is disposed in the embankment.

4. Envirocare does not commingle waste. Each generator is assigned a location and after placement the waste is carefully surveyed and recorded to assure isolation from other waste streams. Upon request, a completely separate embankment can be constructed for a specific generator.

5. Many cell design criteria are exceeded to further insure waste containment. For example, in the Mixed Waste embankment a double liner is required beneath the waste. Envirocare's Mixed Waste embankment includes three synthetic liners and a fourth clay liner. Other design requirements call for 5.5' of radon barrier over the waste, Envirocare incorporates at least 7' of radon barrier over the waste.

6. Many design requirements, such as liquefaction and erosion control are specified to be effective for 500 years; Envirocare has designed each embankment to be effective for at least 1000 years.

7. On several occasions Envirocare has been contacted about waste that according to regulations could be placed in our NORM embankment; however, because of concerns with the waste, Envirocare has chosen on it's own to place the waste in the Mixed Waste embankment to provide better containment of the waste to protect the integrity of the NORM facility.

8. Envirocare has incorporated policies similar to those previously listed in our day to day operations to assure that all local, state and federal requirements are met and in many cases exceeded. Because of this approach, Envirocare benefits from good relations with the local residents and government officials.

ATTACHMENT 4

Price Estimates for DOE
Based on Volume
May 1991

RADIOACTIVE ONLY WASTES

	Cost(per/cf)
1. Less Than 3,000 Cubic Yards of Radioactive Waste	< $28.72
2. Between 3,000 Cubic Yards and 30,000 Cubic Yards of Radioactive Waste	< $21.70
3. Between 30,000 Cubic Yards and 100,000 Cubic Yards of Radioactive Waste	< $14.99
4. Between 100,000 Cubic Yards and 200,000 Cubic Yards of Radioactive Waste	< $11.41
5. Between 200,000 Cubic Yards and 500,000 Cubic Yards of Radioactive Waste	< $ 8.56
6. Over 500,000 Cubic Yards of Radioactive Waste	< $ 7.00

MIXED WASTE

1. Less Than 300 Cubic Yards of Mixed Waste	< $120.00
2. Between 300 Cubic Yards and 3,000 Cubic Yards of Mixed Waste	< $75.00
3. Between 3,000 Cubic Yards and 30,000 Cubic Yards of Mixed Waste	< $57.00
4. Between 30,000 Cubic Yards and 100,000 Cubic Yards of Mixed Waste	< $42.00
5. Between 100,000 Cubic Yards and 300,00 Cubic Yards of Mixed Waste	< $30.00
6. Over 300,000 Cubic Yards of Mixed Waste	< $18.00

ROUTING AND TRANSMITTAL SLIP				DATE August 6, 1991	
TO:				INITIALS	DATE
1. Randall Kaltreider, EH-222				RK	8/7
2. Kathleen Taimi, EH-22 for Tom Tracosi for Ray Pelletier, EH-23				RK	8/7
3. Raymond Berube, EH-20				RPB/cob	8/7
4.				subject to comments	
5.					
ACTION		APPROVAL		AS REQUESTED	XX
COMMENT		FOR YOUR INFORMATION		SIGNATURE	

REMARKS

SUBJECT: Review of Issue Paper Concerning the Disposal of Radioactive Mixed Wastes by the Department

EH-222 has reviewed subject document and concurs with the assessment that the State of New York has the authority, under RCRA, to require DOE to either remove this waste by 9/30/91 or file a RCRA Permit Application by 9/30/91 for continued storage of this waste.

Although it appears as though disposal of this waste at a commercial facility is the cheapest and most practical alternative, the joint and several liability provisions of CERCLA are important considerations should the commercial facility eventually become a Superfund site. In order to add a greater degree of protection to the total life-cycle cost to the public, it is recommended that this issue paper address four additional issues:

1) To what degree are the financial assurance provisions of RCRA sufficient to protect a commercial firm for the

added factor of risk associated with the radioactive nature of our mixed wastes? RCRA requires a permitted commercial facility to obtain liability insurance or other appropriate instruments per 40 CFR Part 264 Subpart H (the Federal Government is exempted from this requirement). The level of this financial assurance, however, was determined by risk analysis which only considered the potential remediation costs associated with RCRA hazardous constituents. DOE should determine if these levels are sufficient. If they are not, then perhaps additional provisions should be imposed upon commercial facilities by the Department, as a condition of the contractual arrangement.

2) Many private firms, concerned as to the potential CERCLA liability associated with the disposal of their waste at commercial facilities, set commercial facilities to develop separate cells designed to eliminate commingling with other disposed wastes. As suggested by Oak Ridge, it would not be unreasonable for the Department to also impose such a requirement upon commercial facilities. This will not eliminate the potential CERCLA liability issue but to the degree that our waste can be isolated, this liability will be reduced to a level no greater than it would be if the Department disposed of the waste itself at a similar type of hydro-geological setting.

3) Although the issue paper indicates that Bechtel personnel toured the site, no mention was made of technical engineering review of the adequacy of the site location and facility design. Such a review should certainly be conducted (especially since it would probably only entail review of work already performed to obtain the RCRA Permit) by the Department prior to the disposal of any waste at such a commercial facility.

4) In regard to the radioactive waste disposed at commercial facilities, the Department must ensure adequate characterization to preclude disposal of any waste commingled with a hazardous waste.

EH-231 has reviewed the subject document and recommends concurrence subject to the following comments:

- The memorandum should be revised to clarify the effect on radioactive and mixed wastes from waste management activities, in addition to environmental restoration activities. At present, the first sentence of the memorandum states that approval is requested to dispose wastes "from environmental restoration activities." However, at the end of the memorandum, recommendations #1, 2, and 4 propose that <u>all</u> radioactive and mixed wastes (with quantity limits in some cases) be authorized for disposal in commercial facilities. If any of these three recommendations is approved, it is not clear whether wastes from waste management activities (non-environmental restoration wastes) are automatically approved for commercial disposal, or whether further approvals are needed for

such wastes. Given that Mr. Duffy oversees both waste management and environmental restoration wastes, and that both types of wastes have the compliance difficulties noted in this memorandum, it is likely that he would be interested in how this issue has been coordinated with the EM-30 side of the house, i.e., whether they are also interested in obtaining such approval and are to be included in this authorization.

- The memorandum should be revised to clarify that if approval to dispose mixed wastes in commercial facilities is obtained, this approval cannot be used to resolve RCRA LDR compliance problems for all mixed wastes, but only for Thirds mixed wastes. The memorandum currently cites the mixed waste RCRA LDR compliance problems as one reason why approval for commercial disposal should be given, thus incorrectly implying that approval will fix these problems for all mixed wastes. (See previous comments for more details.) Further, the memorandum should clarify that for Thirds mixed wastes, approval for commercial disposal will only resolve RCRA LDR compliance concerns temporarily. We can dispose Thirds mixed waste until the National Capacity Variance expires in May 1992, after which time these wastes will have to meet LDR treatment standards prior to disposal. At most, we may have an additional 2 years to use commercial disposal without first treating the wastes if DOE is granted an additional Case-By-Case Extension for Thirds mixed wastes, which is still an unknown. Finally, the memorandum should state whether the two commercial facilities under consideration comply with RCRA minimum technology standards, which is required if mixed wastes will be disposed under the National Capacity Variance or Case-By-Case Extension without meeting LDR treatment standards.

The purpose for comment is to ensure that we do not give Mr. Duffy, nor anyone else in the DOE system, the incorrect impression that approval to use commercial facilities will solve our RCRA LDR problems for mixed wastes. Further, addressing this comment will illustrate that RCRA LDR compliance issues have been thoroughly considered and understood.

[Related to the issue of the applicability of the LDR storage prohibition to environmental restoration wastes, I also attach, for EM's information, one page from an EPA fact sheet on Superfund compliance with the LDRs. Significantly, the fact sheet notes that temporary storage used during CERCLA actions (e.g., storage while awaiting sampling results, or while selecting and designing a remedy) is allowable under the storage prohibition. Perhaps DOE should get further clarification from EPA as to the broader applicability of this statement, i.e., does it apply to DOE environmental restoration activities, including sites under authorities other than CERCLA?]

- Although I would recommend concurrence, the memorandum should make Mr. Duffy aware that if he approves use of commercial disposal to dispose mixed wastes without meeting LDR treatment standards during the variances, DOE may be subject to the criticism that DOE is reversing a long-standing policy of not using commercial disposal to (at least in part) avoid treating mixed wastes to LDR treatment standards. We believe it is appropriate to alert DOE management of possible external criticism of actions we are recommending to them.

nature of many soil and debris matrices (as compared with the industrial process wastes upon which the LDR treatment standards were based), it may be difficult to meet these standards for wastes mixed with soil and debris. Consequently, the Agency is undertaking a rulemaking that will set LDR treatment standards specifically for soil and debris. Until that rulemaking is completed, however, site managers may need to obtain a Treatability Variance for actions addressing contaminated soil and debris.

OTHER LDR REQUIREMENTS

In addition to the four types of restrictions described above, the LDRs also include the following requirements:

- Storage Prohibition: The LDRs prohibit the storage of restricted wastes (including soft hammer wastes) unless storage is solely for the purpose of accumulating sufficient quantities of wastes to facilitate proper treatment, recovery, or disposal. For periods of up to one year, the burden is generally on EPA to prove that storage is not needed to facilitate proper treatment, recovery, or disposal; after one year, the burden of proof shifts to the storage facility. Temporary storage used during CERCLA actions to facilitate proper disposal (e.g., storage while awaiting sampling results, or while selecting and designing a remedy) is allowable under the storage prohibition.

- Exemption for Treatment in Surface Impoundments: Placing untreated wastes in surface impoundments (that meet the minimum technology requirements) for treatment is permissible, provided the treatment residues that do not meet the LDR treatment standards or prohibition levels are removed for subsequent management (through any treatment other than treatment in another surface impoundment) within one year of placement into the surface impoundment.

- Dilution Prohibition: Dilution of a waste as a means to comply with the LDRs is prohibited. However, "dilution" that is part of treatment (e.g., mixing for immobilization) is permissible.

The LDRs also establish requirements for testing, notification, and certification of compliance.

- Testing: Once it is determined that a waste is restricted under the LDRs, generators, treatment facilities, or disposal facilities must test the waste at a frequency specified in the facility's waste analysis plan to demonstrate compliance with LDR treatment standards or California list prohibition levels prior to land disposal.

- Notification: All restricted wastes that are shipped to an off-site treatment, storage, or disposal facility must be accompanied by a notification that includes the EPA hazardous waste number and the applicable LDR restriction that is in effect for those wastes.

- Certification: A treatment facility must certify that the LDR treatment standards are attained before a restricted waste is land disposed off-site. (There are also certification requirements specifically for soft hammer wastes; see Superfund LDR Guide #4.)

OTHER AVAILABLE SUPERFUND/LDR GUIDES

#2 Complying with the California List Restrictions Under LDRs

#3 Treatment Standards and Minimum Technology Requirements Under LDRs

#4 Complying With the Hammer Restrictions Under LDRs

#5 Determining When LDRs are Applicable to CERCLA Response Actions

#6A Obtaining a Soil and Debris Treatability Variance for Remedial Actions

#6B Obtaining a Soil and Debris Treatability Variance for Removal Actions*

#7 Determining When LDRs Are Relevant and Appropriate to CERCLA Response Actions*

*Currently being prepared in OSWER

PREVIOUS EM-331 COMMENTS

I have reviewed the EM-421 memorandum "Commercial Disposal of Department of Energy Radioactive and Mixed Wastes" and have the following comments:

- The memorandum proposes to use commercial disposal only for DOE environmental restoration waste. However, disposal capacity is also unavailable for waste from ongoing DOE production processes and for legacy waste already in storage, both of which may include bulk waste, soil, and debris. The memorandum should clarify why these other wastes are not also being considered for commercial disposal.

- The memorandum gives the incorrect impression that the availability of commercial disposal capacity will immediately resolve all of DOE's mixed waste compliance problems under the RCRA land disposal restrictions (LDRs). Under the LDRs, mixed waste is divided into 4 categories: spent solvent-containing, dioxin-containing, California list, and Thirds mixed wastes. The LDR effective dates have passed for the first 3 categories of mixed waste and, thus, these wastes must be treated to meet LDR treatment standards before they can be land disposed (unless the wastes meet the standards as generated, i.e., the concentrations of hazardous constituents are below LDR standards at the time of generation). Further, any Thirds mixed waste that is <u>also</u> in one of these 3 categories cannot be land disposed without first being treated to LDR treatment standards.

  Therefore, at present, only 1 of these mixed waste categories -- purely Thirds mixed waste -- can be land disposed without treatment. Thirds mixed waste may be land disposed without treatment because under the LDRs they have been granted a 2-year National Capacity Variance, which expires in May 1992. During the Variance, such wastes may be disposed in a landfill without meeting treatment standards <u>if</u> the receiving unit(s) complies with RCRA minimum technology requirements under RCRA 3005(j)(2) or (j)(4) or the unit has received a retrofitting waiver under RCRA 3004(o)(2) or 3005(j) to be considered equivalent to the minimum technology requirements. When the Variance expires in May 1992, such wastes will require treatment before land disposal unless Thirds mixed wastes are granted a second type of LDR variance -- a Case-By-Case Extension (CBC). The maximum extension would be 2 more years, until May 1994. EM-331 is currently preparing a DOE-wide application for a CBC for Thirds mixed waste, but at present, it is unknown whether it will be granted.

  In light of the above, the problems cited in the memorandum (e.g., LDR storage prohibition, lengthy and costly acquisition of RCRA permits for storage facilities, future liability to treat wastes, and other problems associated

with continued storage) will not be avoided for all DOE mixed wastes by deciding to use commercial disposal capacity. These problems will only be avoided for Thirds mixed waste, and only for a limited time.

The memorandum should appropiately reflect these caveats. It should also indicate that the two disposal facilities under consideration meet the RCRA minimum technology requirements (or the equivalent), as required by the National Capacity Variance (assuming they do). Further, to date, DOE has not taken advantage of the National Capacity Variance to dispose mixed wastes without treatment; the Variance has only been used as a means to not violate the LDR storage prohibition. It is possible that by reversing our long-standing position of not using commercial disposal facilities at this time (partially to avoid LDR treatment requirements), DOE could be subject to criticism from environmental groups and others. It may be appropriate to mention this possibility in the memorandum.

OPTION ANALYSIS
FOR THE
RADIOACTIVE MIXED WASTE CONTAINERS
AT THE
COLONIE INTERIM STORAGE SITE

APRIL 12, 1991

bcc:
Weston
EM-40 (3)
EM-42 (3)
L. Price, OR
R. Sleeman, OR
J. Westerbeck, FMPC
S. McCracken, WSSRAP
J. Haugen, CH
L. Goidell, SR
Williams reader
Marilyn suspense
Pat suspense

EM-421:AWilliams:jh:353-8148:7/2/91:colonie.waw

P. Hevner review: 421A pl 7/9
M. White review: Mw 7/9

Retyped today 8/19/91.

	EM-421 Williams 7/3/91
	EM-421 Wagoner 7/3 91
	EM-42 Fulmer 7/3/91
EM-50 8/19/91	EM-42 Fiore 7/3/91
	EM-40 Baublitz 7/30/91
* see attached conditions for concurrence — EM-30 Lytle 9/11/91 *	EM-40 Whitfield 8/9/91
* EH-20 Berube 7/ /91	EM-3 Sellers 9/13/01
EM-20 Scott 8/28/91	EM-2 Grimm 7/ /91
* GC-11 Dennison 7/ /91	EM-1 Duffy 7/ /91

* See attached stats for concurrence.

9101286

DOE F 1325.8
(8-89)
EFG (07-90)

United States Government **Department of Energy**

memorandum

DATE: SEP 11 1991

REPLY TO ATTN OF: EM-30

SUBJECT: Concurrence (with Comments) on EM-421 Proposal for Commercial Disposal of Department of Energy Radioactive and Mixed Wastes

TO: Pat Whitfield, EM-40

EM-421 proposes to contract with Envirocare of Utah, Inc. to dispose of radioactive and mixed wastes resulting from site remediation projects, primarily from the Formerly Utilized Site Remedial Action Project (FUSRAP), Fernald, and Weldon Spring. EM-30 has reviewed the proposal and concurs. However, we believe the following comments should be incorporated into the process of pursuing commercial disposal options:

- o DOE Order 5820.2A requires disposal of low-level waste (radioactive and mixed) at a DOE disposal facility unless an exemption from the Order is granted by DP-12 in consultation with EH-1. Under current line management delegations, this means that EM-40 should apply for an exemption to EM-30, who would approve/disapprove in consultation with EH-1. As part of this exemption process, EM-30 should investigate the current level of environmental and safety oversight being applied at Envirocare (and other typical NRC/Agreement State licensees) and compare this with the oversight extant at DOE-managed disposal facilities. Approval of the exemption would be predicated on (among other things) the degree of safety and assurance provided by licensee oversight as compared to DOE oversight.

- o We recommend that the Request For Proposal require the respondents to include the technical results of their Performance Assessments performed in support of their respective NRC or Agreement State License applications. They should also submit a description of the status of their licensing process, as we understand that Envirocare has not yet been licensed by the State of Utah to dispose of wastes.

If there are any questions, please contact Lee Stevens, EM-331, at 353-7133.

Jill E. Lytle
Associate Director
Office of Waste Operations
Environmental Restoration
and Waste Management

Attachment: "EM-421 Proposal"

Department of Energy
Washington, DC 20585

August 19, 1991

NOTE FOR: Pat Whitfield

I realize there are time constraints on this action, but we need to air some concerns; especially in view of our recent experience with Rollins.

The decision to enter into a contract is a business decision and EM-30 would not interpose any objection. But the decision to dispose is one that involves risk and we feel there should be a discussion on putting in some protections. I suggest we meet ASAP with Randy Scott to decide how to advise Leo and do the required consultation with EH-1.

Jill

Agreement with Randy:

DOE F 1325.8
(8-89)

United States Government **Department of Energy**

memorandum

DATE: NOV 13 1991

REPLY TO
ATTN OF: EM-421 (J. Wagoner, 3-8147)

SUBJECT: Disposal of Colonie, New York, Mixed Wastes at Envirocare Facility

TO: J. LaGrone, Manager
DOE Field Office, Oak Ridge

This is to authorize you to enter into a contractual arrangement with Envirocare of Utah, Inc., or any other similarly qualified disposal facility, for the disposal of the mixed radioactive wastes at the Formerly Utilized Sites Remedial Action Program's Colonie, New York, site. This action is necessary to promote timely compliance with the Resource Conservation and Recovery Act at the Colonie site and to dispose of these materials expeditiously and in conformance with existing land ban restrictions. I am attaching a recent decision memorandum on this subject. Disposal is contingent upon resolution of the following issues:

- o Negotiation of a satisfactory contract;
- o Completion of required environmental analyses;
- o Confirmation of all applicable permits at the time of shipment of the waste; and
- o Compliance with the applicable Competition and Contracting Act requirements for awarding a contract without full and open competition.

Please contact me, or your staff may contact Mr. James Wagoner (FTS 233-8147) of my staff, should further information be required.

Leo P. Duffy
Director
Office of Environmental Restoration
and Waste Management

Attachment

cc:
L. Price, OR-FSRD

United States Government

Department of Energy

Oak Ridge Operations

memorandum

Circ to: FM-421
OTS
3B
WPW

DATE: May 8, 1991

REPLY TO ATTN OF: EW-93:Price

SUBJECT: WASTE DISPOSAL IN UTAH

TO: Leo P. Duffy, Director, Office of Environmental Restoration and Waste Management, FORS, EM-1

This memorandum is in response to the action assigned to me at the April 2, 1991, meeting to explore the matter of radioactive and mixed waste disposal at Envirocare of Utah, currently the only commercial facility in the U.S. licensed to accept DOE wastes.

There is much interest by DOE offices in the possible use of Envirocare. We conducted a rough survey among DOE offices and found that while final decisions cannot be made until completion of analysis of alternatives and ROD's, the following table is indicative of the potential use of commercial disposal. (Please don't treat these figures as definitive because we specifically asked for "quick and dirty" estimates.)

Rad Waste	cu ft	
Fernald	67,000,000	
FUSRAP	50,000,000	
WSSRAP	28,000,000	
OR Reservation	50,000	(not including D&D)
Other Sites	85,000	BNL, BCL, Ames, etc.
Mixed Waste		
OR Reservation	1,200,000	
FUSRAP	850,000	
SR	30,000	
Fernald	20,000	
Other sites	20,000	ANL, Ames, SAN, etc.

A copy of the information sheet provided to other DOE offices is attached.

Mixed waste is a particularly troublesome issue for many sites because of the Land Disposal Restrictions. For example, ORO analysis of alternative solutions for managing the FUSRAP mixed waste at the Colonie Site showed a clear advantage for commercial disposal. This analysis is currently being evaluated by your staff.

Regarding liability concerns, we do not see this as being substantively different from DOE's current routine practice of shipping and disposing of RCRA and TSCA wastes at commercial facilities. The ability of Envirocare to separate wastes in the disposal cell according to its origin or even to dedicate a separate cell to DOE wastes may further mitigate these concerns.

In summary, ORO believes that an EM policy decision allowing the use of commercial disposal sites for DOE wastes when it makes programmatic sense to do so is appropriate. The programmatic evaluation might consider cost and schedule advantages, consistency with environmental analysis and decision documents, assurance that required licenses are in place for the type of waste involved, and satisfactory site inspections.

We appreciate the opportunity to provide this input because your decision on this matter is very important to many elements of the ERWM program. Please call me at FTS 626-0742 or Les Price on my staff at FTS 626-0948 if we can be of further assistance.

W. D. Adams

W. D. Adams, Assistant Manager
Environmental Restoration and
Waste Management

Attachment

cc: Jill Lytle, FORS, EM-30
Pat Whitfield, FORS, EM-40
Jim Bickel, AL
Don Bray, CH
Jim Solecki, ID
Joe Fiore, NV
Leo Little, RL
Dave Simonson, RF
Len Sjostrom, SR
Jerry Westerbeck, FERN

INFORMATION REGARDING ENVIROCARE OF UTAH

Envirocare of Utah, Inc., is a disposal facility for low specific activity radioactive and mixed waste located in Tooele County, Utah. The facility is located on the eastern edge of the Great Salt Lake Desert, 80 miles west of Salt Lake City and approximately three miles south of Interstate 80 (Figure 1). The disposal site is in an area set aside by the county and zoned for radioactive and hazardous waste disposal.

The Envirocare facility adjoins the DOE Vitro Uranium Mill Tailings disposal facility. The DOE facility contains several million cubic yards of low level radioactive mill tailings generated by The Vitro Company at their former uranium mill near Salt Lake City. An Environmental Impact Statement (EIS) was completed by DOE on the suitability for using the site for the disposal of radioactive material at the time the mill tailings were placed there.

The climate is typically desert arid conditions, with average annual rainfall of less than 5 inches and an evaporation rate of greater than 70 inches. The groundwater levels under the site vary from 20 to 30 feet below ground surface. The groundwater at the site is classified as "briny." The EIS conclusion on the site was "Given existing technologies, however, development of the area for any purpose appears unlikely because of its unproductive soil, and its remoteness from population centers." There are no residential or agricultural activities within a 30 mile radius of the facility.

Envirocare has a Radioactive Material License, No. UT 2300249, initially issued on February 2, 1988. There have ten amendments to their initial license with the latest one coming March 21, 1991. The license was issued by the Utah Bureau of Radiation Control, which is an agreement state with the Nuclear Regulatory Commission (NRC) for certain types of radioactive material. The current amended license permits Envirocare to accept Naturally Occurring Radioactive Material (NORM) waste such as Radium-226, source material, special nuclear material, 11(e)1 byproduct, and depleted uranium. Although depleted uranium is technically source material, it is specifically called out by Envirocare to prevent confusion. Additionally, Envirocare is pursuing a license from NRC to permit them to dispose of 11(e)2 byproduct materials. They expect to receive this license by the end of calendar year 1991 or the beginning of 1992.

Envirocare also has a Resource Conservation and Recovery Act (RCRA) Part B permit, EPA Identification Number UTD982598898, to dispose of radioactive mixed waste at their facility, where the radioactive fraction is that which is acceptable under their radioactive materials license. This permit was issued November 30, 1990 by the Utah Bureau of Solid and Hazardous Waste.

Waste can be received by the Envirocare facility in a number of ways. It can be shipped via trucks using Interstate 80 or by rail using Union Pacific's main rail line that runs east and west about one mile north of the site. Envirocare owns a rail spur that extends from the Union Pacific rail to the facility. The site is equipped with a rail car rollover system that can unload large volumes quickly. Waste can be received by the site in a number of forms ranging from barrels, boxes, bags, to bulk rail cars.

The material is placed in the cell in one foot lifts. Each lift is compacted and its compaction checked prior to the next placement of waste. The compaction criteria required does preclude the placement of soil while the material is frozen so the soil received in the winter is typically stored on-site until spring. Accurate records are maintained on the location of the waste in the cell. The wastes placed in the cell are segregated by waste generator. Envirocare also has the option available for large volume generators to build a waste specific cell for the exclusive use of that client.

Envirocare has an established relationship with the Utah Bureau Of Radiation Control, which maintains an on-site field office to monitor activities at the site. To date there has been no significant public opposition to bringing out-of-state waste to the site.

The site is currently being used by EPA for waste disposal from several major remedial action projects nationwide. This includes waste from the remedial action of radium contaminated properties in Montclair, New Jersey and soil from the Denver Radium site. EPA, via the Corps of Engineers, is currently negotiating with Envirocare on a contract for disposal of mixed waste from the Montclair site.

An on-site tour of the facility was conducted in January, 1991 by Bechtel National, Inc. (BNI) Formerly Utilized Sites Remedial Action Program (FUSRAP) personnel. The facility was considered to be operated in a professional and efficient manner, comparable with commercial low-level radioactive waste and hazardous waste disposal facilities.

Fiore

ENVIROCARE OF UTAH, INC.
THE SAFE ALTERNATIVE

May 16, 1991

Environmental Restoration &
Waste Management (EM-40)
Department of Energy
Attn: Pat Whitfield
Washington, DC 205085

Dear Mr. Whitfield:

We were delighted for the opportunity to meet you and learn about the programs you are developing. Pursuant to your request, you will find enclosed:

Attachment 1: A list of clean ups we have assisted with to date, a description of the material received together with the price and cleanup location.

Attachment 2: A list of the DOE sites which we are already working with, and the name of the site manager or individual we have been working with and a brief summary of the dealings with each group.

Attachment 3: A review of the unique considerations associated with Envirocare's site and processes.

Attachment 4: An estimated price schedule based on various volumes. A quick review of these prices show that great savings could be achieved by the DOE, if an integrated and centralized approach is developed with respect to projects involving Envirocare. As we have discussed with you, Envirocare is willing to work with the DOE to establish a reasonable pricing approach for some of the smaller projects which are ready to move material immediately.

215 So. STATE STREET • SUITE 1160 • SALT LAKE CITY, UTAH 84111 • TELEPHONE (801) 532-1330

As we indicated, Envirocare is prepared to construct and maintain an exclusive cell for DOE materials.

I apologize for our delay in getting the name of the person with the EPA who is now responsible for the Denver Radium project. There have been some personnel changes in that organization since the project began.

I would like to invite you and any of your associates to visit our facility at Clive. I would be pleased to personally take you and your associates on the facility tour. We look forward to hearing from you, please call if we can be of further assistance.

Very Truly Yours,

Khosrow B. Semnani
President

Enclosures

KBS/kk

18564

Mr. James R. Powers
Project Director
MK-Ferguson Company
7295 Highway 94 South
St. Charles, Missouri 63304

Dear Mr. Powers:

COMMERCIAL DISPOSAL OF DEPARTMENT OF ENERGY RADIOACTIVE (BY-PRODUCT AND LOW-LEVEL) AND MIXED WASTES

Enclosed for your information are approvals from Headquarters for the limited use of commercial mixed waste disposal facilities. Please let me know if this would be of any benefit to the project.

If you have any questions, please contact Ken Lawver or Bruce Ballew.

Sincerely,

Stephen H. McCracken
Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

PEER:BBallew:x849:mw:12/23/91: (WstDisp.Ltr.)

CONCURRENCES

RTG SYMBOL	INITIALS/SIG.	DATE
PEER	BBallew	12/10/91
EW-94	AGibson	12/10/91
EW-94	JVEssen	12/5/91
EW 94	SMcCracken	12/16/91

DOE F 1325.10
(7-73)

OFFICIAL FILE COPY

002499